

What is claimed is:

1. A peptide having the amino acid sequence represented by formula (I) and capable of converting a transcription factor into a transcriptional repressor:

X1-Leu-Asp-Leu-X2-Leu-X3 (I)

wherein X1 denotes 0 to 10 amino acid residues; X2 denotes Asn or Glu; and X3 denotes at least 6 amino acid residues.

2. A peptide having the amino acid sequence represented by formula (II) and capable of converting a transcription factor into a transcriptional repressor:

Y1-Phe-Asp-Leu-Asn-Y2-Y3 (II)

wherein Y1 denotes 0 to 10 amino acid residues; Y2 denotes Phe or Ile; and Y3 denotes at least 6 amino acid residues.

3. A peptide having the amino acid sequence represented by formula (III) and capable of converting a transcription factor into a transcriptional repressor:

Z1-Asp-Leu-Z2-Leu-Arg-Leu-Z3 (III)

wherein Z1 denotes Leu, Asp-Leu, or Leu-Asp-Leu; Z2 denotes Glu, Gln, or Asp; and Z3 denotes 0 to 10 amino acid residues.

4. A peptide having the amino acid sequence represented by Asp-Leu-Z4-Leu-Arg-Leu (wherein Z4 denotes Glu, Gln, or Asp) and capable of converting a transcription factor into a transcriptional repressor.

5. A protein having any of the following amino acid sequences (a) to (d) and capable of converting a transcription factor into a transcriptional repressor:

(a) the amino acid sequence as shown in SEQ ID NO: 31;

(b) an amino acid sequence derived from the amino acid sequence as shown in SEQ ID NO: 31 by deletion, substitution, or addition of one or a plurality of amino acid residues;

(c) the amino acid sequence as shown in SEQ ID NO: 61; or

(d) an amino acid sequence derived from the amino acid sequence as shown in SEQ ID NO: 61 by deletion, substitution, or addition of one or a plurality of amino acid

residues.

6. A gene encoding a peptide having the amino acid sequence represented by formula (I) and capable of converting a transcription factor into a transcriptional repressor:

X1-Leu-Asp-Leu-X2-Leu-X3 (I)

wherein X1 denotes 0 to 10 amino acid residues; X2 denotes Asn or Glu; and X3 denotes at least 6 amino acid residues.

7. A gene encoding a peptide having the amino acid sequence represented by formula (II) and capable of converting a transcription factor into a transcriptional repressor:

Y1-Phe-Asp-Leu-Asn-Y2-Y3 (II)

wherein Y1 denotes 0 to 10 amino acid residues; Y2 denotes Phe or Ile; and Y3 denotes at least 6 amino acid residues.

8. A gene encoding a peptide having the amino acid sequence represented by formula (III) and capable of converting a transcription factor into a transcriptional repressor:

Z1-Asp-Leu-Z2-Leu-Arg-Leu-Z3 (III)

wherein Z1 denotes Leu, Asp-Leu, or Leu-Asp-Leu; Z2 denotes Glu, Gln, or Asp; and Z3 denotes 0 to 10 amino acid residues.

9. A gene encoding a peptide having the amino acid sequence represented by Asp-Leu-Z4-Leu-Arg-Leu (wherein Z4 denotes Glu, Gln, or Asp) and capable of converting a transcription factor into a transcriptional repressor.

10. A gene encoding a protein having any of the following amino acid sequences (a) to (d) and capable of converting a transcription factor into a transcriptional repressor:

(a) the amino acid sequence as shown in SEQ ID NO: 31;

(b) an amino acid sequence derived from the amino acid sequence as shown in SEQ ID NO: 31 by deletion, substitution, or addition of one or a plurality of amino acid residues;

(c) the amino acid sequence as shown in SEQ ID NO: 61; or

(d) an amino acid sequence derived from the amino acid sequence as shown in SEQ ID NO: 61 by deletion, substitution, or addition of one or a plurality of amino acid residues.

11. Double-stranded DNA comprising a region encoding any of the peptides or proteins according to claims 1 to 5 and having restriction enzyme sites at its both ends.

12. A chimeric protein, wherein any of the peptides or proteins according to claims 1 to 5 is fused to a transcription factor.

13. A chimeric gene, wherein any of the genes according to claims 6 to 10 is fused to a gene encoding a transcription factor.

14. A recombinant vector comprising the chimeric gene according to claims 13.

15. A transformant comprising the recombinant vector according to claim 14.

16. A plant comprising the recombinant vector according to claim 14.